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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,025	08/27/2003	William W. King	P11-28302/04	5132
25006	7590	02/28/2006		
GIFFORD, KRASS, GROH, SPRINKLE & CITKOWSKI, P.C PO BOX 7021 TROY, MI 48007-7021			EXAMINER ZIMMERMAN, JOHN J	
			ART UNIT 1775	PAPER NUMBER
DATE MAILED: 02/28/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/649,025	Applicant(s) KING, WILLIAM W.	
	Examiner John J. Zimmerman	Art Unit 1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/2/05 (election).
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 1-7,23-27,29 and 30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-22 and 28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>20031208</u> . | 6) <input type="checkbox"/> Other: _____ |

FIRST OFFICE ACTION

Election/Restrictions

1. Claims 1-30 are pending in this application. Claims 1-7, 23-27 and 29-30 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention. The invention of claims 8-22 and 28 (Group II) will be examined in this prosecution. Election was made without traverse in the reply filed on December 2, 2005.

Information Disclosure Statement

2. The information disclosure statement filed December 8, 2003 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document. No copies of the Japanese documents listed on the form PTO-1449 have been received (only abstracts of the documents were received) and therefore these documents were not considered.

Claim Objections

3. Claim 28 is objected to because claim 28 depends on a claim that has been withdrawn from consideration. It is requested that claim 28 be presented in independent form.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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5. Claims 17-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 17 recites the limitation "said zinc layer" in line 2. There is insufficient antecedent basis for this limitation in the claim. Dependent claim 18 incorporates the indefinite matter of claim 17.

7. Claim 19 recites the limitation "said phosphating agent crystalline layer" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 8-13 and 20-22 are rejected under 35 U.S.C. 102(b) as being anticipated by McGuire (U.S. Patent 4,314,880).

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10. McGuire discloses steel having an iron-aluminide intermetallic alloy layer with a thickness of about 0.001 inches and an aluminum content of 23.8 % (e.g. column 2, lines 32-47) and wherein the steel substrate can be tubular (e.g. see column 2, lines 67-68). The ability of the steel substrate to be miscible with molten zinc would be inherent to the composition of the article.

11. Claims 8-13 and 20-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Furukawa (JP 54-17360).

12. Furukawa discloses steel having an iron-aluminide intermetallic alloy layer with a thickness of between 10 and 30 microns (e.g. see abstract and Tables 1-2 for compositions). The ability of the steel substrate to be miscible with molten zinc would be inherent to the composition of the article.

13. Claims 8-13 and 20-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Rallis (U.S. Patent 4,655,852).

14. Rallis discloses steel having an iron-aluminide intermetallic alloy layer with a thickness of between 0.002 to 0.027 inches (e.g. see column 2, lines 34-51). Barrels (i.e. tubes) are treated (e.g. see Example 1). The ability of the steel substrate to be miscible with molten zinc would be inherent to the composition of the article. The aluminum content in intermetallic layer would be a function of the specific intermetallic compound.

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15. Claims 8-10, 14, 20-21 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Okumura (JP 06-299312).

16. Okumura discloses steel having an iron-aluminide intermetallic alloy layer with a thickness of about 1 micron or less (but with comparative examples of up to 5 microns - e.g. see comparative examples in Table 2) and an aluminum content of 20-80 wt.% (e.g. see paragraph [0014] and Table 2). The ability of the steel substrate to be miscible with molten zinc would be inherent to the composition of the article. An upper zinc layer is formed (e.g. paragraph [0010]). Regarding claim 28, although Okumura may not disclose the same process, a product is claimed and when there is a substantially similar product, as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct not the examiner to show that the same process of making, see *In re Brown*, 173 U.S.P.Q 685, and *In re Fessmann*, 180 U.S.P.Q. 324.

17. Claims 8-16, 21 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Van Ooij (U.S. Patent 6,372,296).

18. Van Ooij discloses steel having an iron-aluminide intermetallic alloy layer with a thickness of preferably 75 microns and a further upper layer comprising zinc of preferred thickness of 25 microns (e.g. see column 7, lines 27-51). The ability of the steel substrate to be miscible with molten zinc would be inherent to the composition of the article. Regarding claim

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28, although Van Ooij may not disclose the same process, a product is claimed and when there is a substantially similar product, as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct not the examiner to show that the same process of making, see *In re Brown*, 173 U.S.P.Q 685, and *In re Fessmann*, 180 U.S.P.Q. 324.

Claim Rejections - 35 USC § 103

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

20. Claims 8-22 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Ooij (U.S. Patent 6,372,296) in view of applicant's disclosure of the prior art.

21. Van Ooij discloses steel having an iron-aluminide intermetallic alloy layer with a thickness of preferably 75 microns and a further upper layer comprising zinc of preferred thickness of 25 microns (e.g. see column 7, lines 27-51). The ability of the steel substrate to be miscible with molten zinc would be inherent to the composition of the article. The composition of the iron-aluminide intermetallic alloy layer would be a function of the bath composition and process. Regarding claim 28, although Van Ooij may not disclose the same process, a product is claimed and when there is a substantially similar product, as in the applied prior art, the burden

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of proof is shifted to the applicant to establish that their product is patentably distinct not the examiner to show that the same process of making, see *In re Brown*, 173 U.S.P.Q 685, and *In re Fessmann*, 180 U.S.P.Q. 324. Van Ooij may differ from some of the claims in that Van Ooij may not disclose the further use of a phosphating agent crystalline comprising hexafluoro-titanium phosphate and an aluminum particulate filled cured epoxy overlayer, but applicant admits that it is conventional in the art to use a combination of barrier coatings and galvanic coatings in a multilayer laminate coating in order to further protect steel (e.g. see Background of the Invention - page 3, first full paragraph) and applicant also admits that phosphating agent crystalline comprising hexafluoro-titanium phosphate and an aluminum particulate filled cured epoxy overlayer are commonly used in the prior art to increase corrosion resistance (e.g. see Background of the Invention - page 2, first full paragraph; page 3, line 21 - page 4, line 23). In view of applicant's disclosure of the prior art, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use one of or a combination of phosphating agent crystalline comprising hexafluoro-titanium phosphate and an aluminum particulate filled cured epoxy coatings on the plated steel of Van Ooij because applicant admits that combinations of these types of coatings are generally used in the prior art to further increase the corrosion resistance of steel articles. Regarding claim 22, it would have been obvious to one of ordinary skill in the art to apply the treatment of Van Ooij to steel articles of any conventional configuration in order to improve their corrosion resistance. In addition, applicant admits that piping is a conventional configuration in this field (e.g. see Background of the Invention - page 2, lines 1-4).

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22. Claims 8-11, 14-22 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okumura (JP 06-299312) in view of applicant's disclosure of the prior art.

23. Okumura discloses steel having an iron-aluminide intermetallic alloy layer with a thickness of about 1 micron or less. The intermetallic layer of equal to 1 micron so closely approximates a thickness of "greater than 1 micron", that prima facie, one of ordinary skill in the art would expect the properties to be the same or essentially indistinguishable. In any event, comparative examples of up to 5 microns are disclosed (e.g. see comparative examples in Table 2). Okumura discloses an aluminum content of 20-80 wt.% (e.g. see paragraph [0014] and Table 2 for specific composition percentages). The ability of the steel substrate to be miscible with molten zinc would be inherent to the composition of the article. An upper zinc layer is formed (e.g. paragraph [0010]). Regarding claim 28, although Okumura may not disclose the same process, a product is claimed and when there is a substantially similar product, as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct not the examiner to show that the same process of making, see *In re Brown*, 173 U.S.P.Q. 685, and *In re Fessmann*, 180 U.S.P.Q. 324. Okumura may differ from some of the claims in that Okumura may not disclose the further use of a phosphating agent crystalline comprising hexafluoro-titanium phosphate and an aluminum particulate filled cured epoxy overlayer, but applicant admits that it is conventional in the art to use a combination of barrier coatings and galvanic coatings in a multilayer laminate coating in order to further protect steel (e.g. see Background of the Invention - page 3, first full paragraph) and applicant also admits that phosphating agent crystalline comprising hexafluoro-titanium phosphate and an aluminum

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particulate filled cured epoxy overlayer are commonly used in the prior art to increase corrosion resistance (e.g. see Background of the Invention - page 2, first full paragraph; page 3, line 21 - page 4, line 23). In view of applicant's disclosure of the prior art, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use one of or a combination of phosphating agent crystalline comprising hexafluoro-titanium phosphate and an aluminum particulate filled cured epoxy coatings on the plated steel of Okamura because applicant admits that combinations of these types of coatings are generally used in the prior art to further increase the corrosion resistance of steel articles. Regarding claim 22, it would have been obvious to one of ordinary skill in the art to apply the treatment of Okamura to steel articles of any conventional configuration in order to improve their corrosion resistance. In addition, applicant admits that piping is a conventional configuration in this field (e.g. see Background of the Invention - page 2, lines 1-4). Regarding the thicknesses of the zinc coatings in claims 15 and 16, it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the thickness of the zinc coating layer to meet the life time and environmental conditions expected of a particular steel article. Applicant discloses that this type of thickness optimization is conventional (e.g. see Background of the Invention - sentence spanning pages 2 and 3).

24. Regarding the use of applicant's disclosure of the prior art in rejections, it is axiomatic that consideration of the prior art cited by the examiner must, of necessity, include consideration of the admitted state of the art found in applicant's specification, *In re Davis*, 305 F.2d 501, 134 USPQ 256 (CCPA 1962); *In re Hedges*, 783 F.2d 1038, 228 USPQ 685 (Fed. Cir. 1986).

Admitted knowledge in the prior art may be used in determining patentability of the claimed

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subject matter, *In re Nomiya*, 509 F.2d 566, 184 USPQ 607 (CCPA 1975). Regarding the use of comparative examples in the prior art, all the disclosures in a reference must be evaluated for what they fairly teach one of ordinary skill in the art even though the art teachings relied upon are phrased in terms of a non-preferred embodiment or even as being unsatisfactory for the intended purpose, *In re Boe*, 148 USPQ 507 (CCPA 1966); *In re Smith*, 65 USPQ 167 (CCPA 1945); *In re Nehrenberg*, 126 USPQ 383 (CCPA 1960); *In re Watanabe*, 137 USPQ 350 (CCPA 1963).

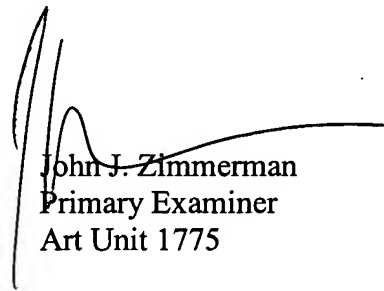
Conclusion

25. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The additional art of record serves to further establish the level of ordinary skill in the art at the time the invention was made.

26. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John J. Zimmerman whose telephone number is (571) 272-1547. The examiner can normally be reached on 8:30am-5:00pm, M-F. Supervisor Jennifer McNeil can be reached on (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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27. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John J. Zimmerman
Primary Examiner
Art Unit 1775

jjz
February 17, 2006